AMENDMENTS TO THE SPECIFICATION:

Please substitute the following numbered paragraphs for the corresponding numbered paragraphs in the specification.

[0002] In many fluid flow systems, for example, underground irrigation systems, a large fluid supply pipe is provided with a service ~~TEE~~ tee. The service ~~TEE~~ tee is provided with a fitting which feeds a lateral line for flowing fluid to an exit port, e.g., a nozzle, or a sprinkler head. Typically, the male and female fittings between the service ~~TEE~~ tee and the lateral line utilize a machined tapered pipe thread. Generally, the male fitting has threads which taper down to a smaller diameter at the distal end of the male fitting. The female threads likewise are tapered into general conformance with the male threads.

[0003] In tapered pipe threads of this type, the threads *per se* provide both sealing and structural connections between the fittings. However, these fittings are very difficult and costly to machine and require high precision to match the threads. Tapered threads of this type are also difficult and time-consuming to assemble in the field and require the use of lubricating and seal-enhancing tape and paste. Moreover, both functions of sealing and connecting the fittings to one another is difficult to achieve where the predetermined orientation of the pipes to which the fittings are connected is required. For example, if the lateral connection from the service ~~TEE~~ tee is to extend at right angles to the service ~~TEE~~ tee, i.e., normal to the direction of flow through the ~~TEE~~ tee, the tapered threads must both seal and connect in order to locate the lateral connection in that orientation. If the threads are not properly oriented relative to one another, the fitting may require rotation beyond the orientation point to force the threads into the desired orientation. Conversely, threading short of the full threaded extent of the threads and leaving the threads loose to achieve the predetermined orientation may result in substantial leakage through the threaded joint. That is, in order to first achieve a seal and then orientation, very high torques may be required to rotate the fitting to the necessary orientation. It is

possible that the additional rotation required may not be available due to this very high torque or the lack of remaining threads. Accordingly, there is a need for a connection system which affords connections between male and female fittings in a manner to provide the physical connection between the fittings, as well as the seal, without regard to the rotational orientation of the fittings.

[0003] In accordance with a preferred embodiment of the present invention, there is provided male and female fittings for a connection system wherein the functions of sealing and connection are separated from one another. Particularly, a female fitting is provided, preferably on a service ~~TEE~~ tee, although the female fittings and other devices conveying fluids may be provided on other types of pipes and on lateral lines. The female fitting has non-tapered straight cylindrical threads that are preferably cast to final form rather than machined. The female fitting preferably also includes an annular gasket spaced from the threads and having a radially inwardly facing sealing surface. Alternatively, the gasket could reside in the male fitting and engage a sealing surface in the female fitting. The male fitting has complementary straight cylindrical threads for threaded engagement with the female threads. The male fitting also includes a cylindrical extension spaced axially from the male threads.

[0008] FIGURE 2 is an enlarged side elevational view of a service ~~TEE~~ tee with parts broken out and in cross-section illustrating the female fitting;

[0009] FIGURE 3 is an enlarged perspective view of a male fitting for cooperation with the female fitting of the service ~~TEE~~ tee;

[0013] Referring now to the drawings, particularly to Figure 1, there is illustrated a service ~~TEE~~ tee, generally designated 10, which is typically connected to a main fluid line such as a large water-carrying irrigation pipe,~~,~~ not shown. The service ~~TEE~~ tee 10 includes couplings 12 at opposite ends for connection with the main fluid pipe. The service ~~TEE~~ tee 10 also includes a fitting 14 for coupling the main fluid line to one or

more lateral lines for distribution of the fluid, e.g., water. For example, the fitting 14 comprises a female fitting for connection to a male fitting 16 (Figure 3) which may form part of a lateral distribution line. The opposite end of the fitting 16 terminates in a connection 17, e.g., a threaded connection, for coupling with one or more lateral lines as desirable or necessary. Thus, as illustrated, connection 17 may connect with a lateral line 18 and one or more lateral lines 20 which terminate, for example, in below-ground irrigation nozzles 22.

[0014] Referring now to Figure 2, the service ~~TEE~~ tee 10 is formed of an integral cast material. The lateral fitting 14 is preferably a female fitting, although it will be appreciated that the female and male fittings 14 and 16 may be reversed, i.e., the male fitting provided on the service ~~TEE~~ tee and the female fitting on the lateral connection. In the illustrated form, however, the female fitting 14 includes non-tapered straight cylindrical threads 26 commencing at the outer end of the cylindrical fitting 14 and terminating at their inner ends in an annular recess 28 adjacent the outlet opening 30 of the service ~~TEE~~ tee 10. As illustrated in Figure 4, the female fitting 14 preferably also includes an annular gasket 32 received in the recess 28. Gasket 32 includes an annular inner surface 34 for sealing engagement with the male fitting as described below. Conversely, the male fitting may have the annular gasket and female fitting have a sealing surface.

[0015] Referring to Figure 3, the male fitting 16 includes a cylindrical section 36 carrying a plurality of cylindrical male threads 38. Male fitting 16 also includes a cylindrical extension 40 spaced axially from the male threads 38 and terminating at the inner end of the male fitting. As best illustrated in Figure 4, the gasket 32, preferably formed of rubber, is located axially inwardly of the female threads 26, i.e., remote from the opening of the female fitting receiving the male fitting. From a review of the drawing figures, it will be appreciated that the male threads 38 are located an axial distance from the male fitting opening at least equal to an axial distance between the gasket 32 and the

first of the female threads adjacent the female fitting opening. In this manner, the cylindrical extension 40 of the male fitting seals with the sealing surface 34 of gasket 32 upon initial threading engagement of the male and female threads with one another. As a consequence of this arrangement, the fittings are rotatable relative to one another about their common axes into any angular orientation while the seal between the fittings is maintained. That is, the engagement of the male and female threads with one another maintains the physical connection securing the male and female fittings to one another, while the engagement of the cylindrical extension 40 and the gasket 32 ensures the sealing function for all rotatable orientations of the fittings relative to one another. Thus, with the service ~~TEE~~ tee in-ground and, for example, the female fitting projecting upwardly from the service ~~TEE~~ tee, the male fitting with its elbow 44 may be oriented at any angular orientation for the full 360° while maintaining the secured connection with the ~~TEE~~ tee.